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January 16, 1995

95-RF-00693

Jessie M. Roberson

Assistant Manager for

Environmental Restoration

DOE/RFFO

Attn: R. H. Birk

ENVIRONMENTAL PROTECTION AGENCY'S (EPA) COMMENTS ON TECHNICAL MEMORANDUM  
TM) 4, OPERABLE UNIT (OU) 3, CHEMICALS OF CONCERN (COC) - SGS-020-95

Action: Request schedule extension

We are in receipt of the EPA's formal comments regarding TM 4, Operable Unit 3,  
Chemicals of Concern. These comments were dated January 4, 1995 and were transmitted  
by facsimile to EG&G Rocky Flats, Inc. (EG&G) on January 9, 1995.

As you are aware, the formal regulatory agency comments rejected the COCs selected in TM  
4 and dictated the COCs which should be used in the OU 3 risk assessment. Detailed  
responses to the agency comments are included in Attachment 1.

Agency rejection of TM 4 is based on what is perceived to be deviations from the approved  
methodology. Specifically, EPA and the Colorado Department of Public Health and  
Environment (CDPHE) cite the following as deviations:

- 1 ) excluding Standley Lake and Mower Reservoir subsurface sediments from the COC selection process;
- 2 ) conducting the weight of evidence evaluation at the end of the process instead of the beginning;
- 3 ) not retaining chemicals with maximum concentrations above the Preliminary Remediation Goals (PRGs);
- 4 ) not applying the "Gilbert Methodology" for stream surface water, stream sediment, and groundwater; and
- 5 ) applying the COC selection process by Individual Hazardous Substance Site (IHSS) instead of by OU.

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## ACTION ITEM STATUS:

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CLOSED

## LETTER APPROVALS:

AUP: AUP

ORIGINATOR &amp; TYPIST INITIALS

THS :jlm

A-DU03-000308

EG&G is extremely disappointed in the agency comments. It is commonly recognized that OU 3 represents different conditions and circumstances than the rest of the site and deviations from the agreed-on process are warranted. Furthermore, we would like to emphasize that the limitations of the approved process were discussed with the regulators, and technically sound alternatives were presented in meetings and in TM 4. Clearly the consultative process has broken down. It is recommended that the Department of Energy/Rocky Flats Field Office (DOE/RFFO) invoke the Interagency Agreement (IAG) dispute resolution process to amplify the technical arguments presented in TM 4. Rationale for disputing the position taken by the agencies is based on the agreements reached and guidance given during the consultative process and technically sound arguments presented in TM 4.

Much of the development of TM 4 was done in consultation with the regulatory agencies and remains faithful to the jointly developed assessment methodology agreed to on March 30, 1994. This process employs the methodology developed by Dr. Richard Gilbert of Battelle National Laboratory and requires rigorous statistical analyses which use comparable background data sets (Gilbert, 1993). The OU 3 RCRA [Resource Conservation and Recovery Act] Facility Investigation/Remedial Investigation (RFI/RI) field investigation program, designed in 1991 and approved by EPA and CDPHE in 1992, was intended to provide a one-to-one Upper Tolerance Limit (UTL) comparison of newly collected concentration data to background concentration data. It was not designed to support the rigorous statistical analyses of the Gilbert Methodology.

Since there were some uncertainties about which data sets (both OU 3 and background) would be applied to the COC selection process, consultation meetings were held with all parties. DOE, EPA, and CDPHE met on three occasions (February 14, 1994, March 10, 1994, and May 3, 1994), not just on March 10, 1994, as indicated in the agency TM 4 comments. Through this iterative, consultative process many issues, including those relating to selection of COCs, were discussed and agreements reached. Work proceeded based on these agreements.

While TM 4 was under development, it became clear that the Gilbert Methodology had limitations relative to the OU 3 data sets. The statistical tests employed by this methodology require appropriate data sets for both background samples and investigative samples. It was determined that available background data sets were not representative of conditions found in OU 3, and that some of the OU 3 data did not meet the underlying assumptions of the Gilbert Methodology (e.g., reservoirs).

On February 14, 1994, all parties agreed that if sediment core data are not associated with an exposure pathway, the data do not need to be compared to background data for the Human Health Risk Assessment. However, the subsurface sediments for Great Western Reservoir were included in the evaluation because of uncertainty regarding its future use and the potential that an exposure pathway may exist in the future. The parties also agreed that

since groundwater was not an exposure pathway, a comparison to UTLs was acceptable. DOE/RFFO agreed to confirm that there was not a problem with the groundwater. This issue was confirmed and will be discussed in the RFI/RI Report.

On March 10, 1994, DOE/RFFO agreed to go through the rigorous statistical tests for stream sediments and use a Weight of Evidence (WOE) evaluation and professional judgement (also part of the Gilbert statistical evaluation) for the reservoir sediments. This agreement was formalized with a letter from EPA dated March 24, 1994. The statistical tests were conducted and results presented at the May 3, 1994 meeting.

On May 3, 1994, DOE/RFFO presented specifics on the WOE approach that would be followed and which media it would be applied to. Discussions were held at this meeting regarding what the emphasis and priorities should be for OU 3. The issue of concern was the potential for background concentrations of metals such as arsenic and beryllium to become the risk drivers for OU 3, thereby changing the focus from radionuclide contamination.

The May 3, 1994 presentation showed why the Gilbert statistical evaluations for groundwater, stream and reservoir surface waters, and reservoir sediments were not performed. Sound technical arguments for performing WOE evaluations for these media were also presented. Some of these arguments included a discussion of the Gilbert statistical evaluation results for stream sediments. Results of this evaluation identified 20 out of 26 metals as Potential Contaminants of Concern (PCOCs) based mainly on the Gehan test component of the Gilbert Methodology. It was determined that these results were caused by limitations of the compared data sets and we recommended the weight of evidence evaluation for the stream sediments as well. The results of the Gilbert statistical evaluation of stream sediments were not presented in TM 4.

The conclusions from the May 3, 1994 meeting were as follows:

- The weight of evidence approach requires a significant level of effort. It was stressed that the main concern for OU 3 is plutonium and americium.
- EPA stated that groundwater was not a complete pathway requiring evaluation in the Human Health Risk Assessment.
- Susan Griffin of EPA suggested that we may be able to reduce the effort by excluding chemicals with maximum concentrations below the PRGs (since the weight of evidence approach did require a significant level of effort).

Additionally, EPA and CDPHE committed to discuss the approach for metals with their internal resources and provide input to DOE by May 10, 1994. No input from EPA or CDPHE was ever received. However, in order to meet our IAG schedule commitments, the COC selection process proceeded without additional input.

The agencies' contention that the exclusion of subsurface sediments from the evaluation represents a deviation from the approved process does not take into consideration that guidance was given on February 14, 1994 to forego a comparison to background data if there is not an exposure pathway for subsurface sediments. Their contention also does not recognize that there was uncertainty regarding potential exposure pathways for Great Western Reservoir subsurface sediments and that these sediments were included in the evaluation.

The contention that the Gilbert Methodology was not applied to stream surface waters, stream sediment, and groundwater, does not take into consideration that on May 3, 1994, it was agreed that groundwater was not considered to represent an exposure pathway. EPA also failed to recognize that it is dubious that the results of this methodology adequately represent site conditions due to uncertainties introduced by inappropriate data sets for these media, and that this fact was presented to the agencies on May 3, 1994.

The agencies contend that by conducting the WOE evaluation at the end of the COC selection process instead of the beginning, we deviated from the approved process. The March 24, 1994 EPA letter provides the basis for adding a WOE evaluation to the COC selection process. The agencies did not dictate where in the selection process this evaluation would be conducted. The WOE evaluation was conducted at the end of the process for two reasons: 1) Conducting the WOE evaluation at the end of the process is a more conservative approach, since the metals and radionuclides are taken through all of the risk screens first, indicating which PCOCs contribute to risk; and 2) Concentrating on PCOCs that are risk contributors reduced the level of effort spent on metals that are not of concern from a human health perspective. In addition, when the WOE evaluation is applied first as was done in the CDPHE letter report, the chemicals remaining as risk drivers in the "Areas of Concern" are the same as those identified in TM 4.

The agencies have stated that chemicals with maximum concentrations above the PRGs were not retained as COCs. These chemicals were in fact retained as PCOCs; however, when evaluated using WOE, it was determined that they were not COCs because concentrations/activities were consistent with background and benchmark levels, and did not warrant further evaluation.

The agencies point out that the COC selection process was applied on an IHSS basis instead of an OU basis. While this is true, the agencies fail to recognize the limitations of the agreed upon process when applied to OU 3. OU 3 consists of four separate, very large IHSSs. IHSSs 200 (Great Western Reservoir), 201 (Standley Lake), and 202 (Mower Reservoir), are all water bodies separated by large expanses of land, with different influent sources, and different future land uses. It makes technical sense to evaluate the three reservoirs

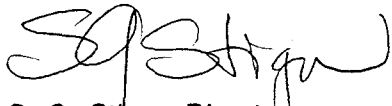
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separately because they represent discrete exposure units. Combining all IHSSs by medium, would indicate plutonium as a COC in sediment for Standley Lake and Mower Reservoir. This despite the fact that the maximum values for plutonium in Standley Lake and Mower Reservoir surface sediments are 0.553 picocuries per gram (pCi/g) and 0.488 pCi/g, respectively. These values are an order of magnitude below the residential PRG of 3.43 pCi/g. Additionally, because these sediments will remain under water, there is no exposure pathway available. DOE would spend significant resources carrying Standley Lake and Mower Reservoir sediments through the risk assessment process only to show there is no risk.

In conclusion, EG&G is extremely disappointed that TM 4 did not achieve agency approval despite concerted efforts to involve the agencies throughout the COC selection process. These comments cause us to question the utility of a consultative process with the regulatory agencies. We strongly urge DOE/RFFO to invoke dispute resolution under Part 16 of the IAG. In doing so we hope that the agencies are asked to respond to TM 4 on a technical basis only. If the dispute is limited to the technical merits of the document, we feel confident that all parties will reach a mutually satisfactory resolution.

Following resolution of this dispute, EG&G recommends that a schedule extension be requested. TM 4 was submitted September 23, 1994, one month ahead of the IAG schedule. This is in keeping with DOE's commitment to not only comply with the IAG schedule, but also accelerate it wherever possible. In spite of committing to a fifteen day review period, EPA and CDPHE spent over three months reviewing this document. During this three-month time period, DOE/RFFO formally requested comments on November 10, 1994 and December 9, 1994. EG&G considers this delay to be unacceptable. All parties must be held equally accountable for the commitments of this project. It is recommended that DOE/RFFO request a day for day schedule extension which is inclusive of the time required to resolve the dispute.

Additional supporting documentation will be provided under separate cover. If you have any questions, please call me or Mark Buddy of my staff at extension 8519.



S. G. Stiger, Director  
Environmental Restoration Program Division  
EG&G Rocky Flats, Inc.

Orig. and 1 cc - J. M. Roberson

Attachment:  
As Stated

cc:  
M. N. Silverman - DOE/RFFO